POWER GENERATION USING SUSPENSION

PROJECT REPORT
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In partial fulfilment of the requirements
For the award of the degree of

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IN

ELECTRICAL AND ELECTRONICS ENGINEERING

The APJ Abdul Kalam Technological University

Adi Shankara Institute of Engineering and Technology, Kalady

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CERTIFICATE

Certified that this is a bonafide record of the project entitled

"POWER GENERATION USING SUSPENSION"

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ABSTRACT

Power generation using suspension is an innovative concept that harnesses the vertical motion or oscillations of a suspended object to generate electrical energy. This abstract provides an overview of the key aspects and findings related to the utilization of suspension-based systems for power generation. The suspension system serves as the foundation of this approach. employing a suspended object capable of vertical movement, such as a platform or pendulum. A mechanical linkage system is employed to transfer the vertical motion of the suspension to a rotational motion, which is then used to drive a generator. The generator, typically consisting of coils and magnets, converts the mechanical energy into electrical energy through electromagnetic induction. To ensure a stable and usable power output, rectification and regulation mechanisms are employed to convert the generated alternating current (AC) into direct current (DC) and regulate the voltage. Additionally, energy storage systems, such as battery banks or capacitor banks, are incorporated to store excess energy and provide a consistent power supply. Control and monitoring systems play a crucial role in optimizing the performance of the power generator. Through the use of sensors and feedback mechanisms, parameters such as suspension motion, electrical output, and system efficiency are measured and monitored. This enables the control system to adjust the generator's operation to maximize power output and adapt to varying conditions. The generated electrical power can be employed for various applications based on the generator's scale and capacity. It has the potential to power small devices, charge batteries, contribute to larger power grids, or provide electricity for off-grid installations. Power generation using suspension demonstrates a promising approach to convert mechanical energy into electrical energy, showcasing its potential as a sustainable and efficient method of power generation.